BACTERIAL MENINGITIS (OTHER)

This is for bacterial meningitis NOT due to *H. influenzae, S. pneumoniae,* Group A or B strep, Listeria, or *Neisseria meningitidis*.

✓DISEASE AND EPIDEMIOLOGY

Clinical Description:

Bacterial meningitis has an abrupt onset of a severe headache, stiff neck, and fever. Most individuals will be hospitalized and will become seriously ill.

Causative Agent:

Many bacteria can cause bacterial meningitis. Among the most common are *E. coli* and other enteric bacteria such as Enterococcus, Klebsiella and Enterobacter species, as well as Staphylococcus species including methicillin resistant Staph aureus (MRSA).

Differential Diagnosis:

The differential diagnosis includes all of the bacterial causes of meningitis listed above, along with *H. influenzae, S. pneumoniae*, Group A and B strep, Listeria species, and *Neisseria meningitidis*.

Laboratory identification:

All of these pathogens are easily cultivated in culture.

> **UPHL:** Can assist a clinical laboratory with isolate confirmation, but does not require that any of the listed organisms be submitted.

Treatment:

Bacterial meningitis is treated with appropriate antibiotics and supportive care.

Case fatality:

The fatality rate varies with organism, the age of the patient, and underlying comorbidities. Fatality rate can be very high in the very young and old populations, especially those with comorbidities such as influenza.

Reservoir:

Many of these organisms are part of the normal enteric or skin flora. With the exception of MRSA, many of these organisms are considered opportunistic and will be identified in individuals with other health issues.

Transmission:

As many of these organisms are part of the normal flora, person to person transmission is not usually implicated in the spread of these diseases.

Susceptibility:

The very young and very old individuals with accompanying comorbidities are at highest risk of these diseases.

Incubation period:
As these organisms are part of the normal flora, it is difficult to assess an incubation period.

Period of communicability:
These diseases are not communicable.

Epidemiology:
The causative agent for bacterial meningitis varies with age.

- 0-4 weeks of age:
  - Group B strep
  - *E. coli*
  - *Listeria monocytogenes*
  - *Strep pneumoniae*
- 1-3 months:
  - *E. coli*
  - *Listeria monocytogenes*
  - *Neisseria meningitidis*
  - Group B strep
  - *Strep pneumoniae*
- 3 months to 50 years:
  - *Neisseria meningitidis*
  - *Strep pneumoniae*
- > 50 years:
  - *Listeria monocytogenes*
  - *Strep pneumoniae*
- Not age related
  - Enterobacteriaceae
  - *Staph aureus*

The incidence is 5-10 cases per 100,000 persons per year for all bacterial diseases. Incidence peaks in winter and spring.

✓PUBLIC HEALTH CONTROL MEASURES

Public health responsibility:

- Investigate all suspect cases of disease and fill out and submit appropriate disease investigation forms.
- Provide education to the general public, clinicians, and first responders regarding disease transmission and prevention.
- Identify clusters or outbreaks of this disease.
- Identify sources of exposure and stop further transmission.

Prevention:
While it is difficult to totally prevent this group of illnesses (the vaccine-preventable ones are all listed individually), typical infection control measures such as handwashing and respiratory etiquette are always appropriate.

Chemoprophylaxis:
None.

Vaccine:
None for the enterobacteriaceae or Staphylococcus.

Isolation and quarantine requirements:
Isolation: None
Hospital: Standard body substance precautions
Quarantine: None

✓CASE INVESTIGATION

Reporting:
All cases of bacterial meningitis are reportable.

Case definition:

Bacterial meningitis (1990):
Clinical Description
Bacterial meningitis manifests most commonly with fever, headache, and a stiff neck; the disease may progress rapidly to shock and death. However, other manifestations may be observed.

Laboratory Criteria
- Isolation of a bacterial species from the cerebrospinal fluid

Case Classification
Confirmed: a clinically compatible case that is either laboratory confirmed or is accompanied by a positive blood culture

Comment

Cases of bacterial meningitis caused by *Haemophilus influenzae*, *Neisseria meningitidis*, group A *Streptococcus*, and *Listeria monocytogenes* should be reported to CDC's National Notifiable Diseases Surveillance System under the disease codes specific for these organisms. Only cases of bacterial meningitis caused by organisms other than those specified should be reported as cases of "bacterial meningitis, other."

Case Investigation Process:

- The investigation process for the following organisms:
  - *H. influenzae*,
  - *S. pneumoniae*,
  - Group A or B strep, Listeria, or
  - *Neisseria meningitidis*

  requires additional information. If the meningitis is due to one of those organisms, please refer to that disease plan for the correct process.
- Fill out a morbidity form

Outbreaks:

Not applicable

Identification of case contacts:

None

Case contact management:

None

✓REFERENCES

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